

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A data writing apparatus for writing data into storage means, comprising:

a processor unit;

a first storage means, , wherein said first storage has a redundancy structure; and

a control unit which writes data in said first storage means in response to a command from said processor unit,

wherein the control unit includes a second storage means, and

a logical disk writing/reading means for writing data in said second storage means when instructed by said processor unit and reporting completion of writing to said processor unit,

wherein the processor instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage means, and

wherein said logical disk writing/reading means reports the completion of writing to said processor unit when the control unit writes the data in said second storage means.

2. (previously presented): The data writing apparatus according to claim 1, wherein said control unit further comprises a logical disk monitoring means which verifies if said redundancy

destruction at said corresponding address of said first storage means has been recovered, and

when said logical disk monitoring means verifies that redundancy at said corresponding address of said first storage means has been recovered, said logical disk writing/reading means reads data written in said second storage means and writes said data at said corresponding address in said first storage means.

3. (previously presented): The data writing apparatus according to claim 2, wherein said logical disk monitoring means comprises:

a management table updating means which checks a status of said first storage means and updates a management table;

a timer which informs said management table updating means of a lapse of a given time period; and

a write-enableness reporting means which reports recovery of said redundancy destruction at said corresponding address of said first storage means to said logical disk writing/reading means when said management table indicates recovery of said redundancy.

4. (previously presented): The data writing apparatus according to claim 1, wherein said second storage means is a non-volatile storage means or a volatile storage means which has an independent power supply.

5. (previously presented): The data writing apparatus according to claim 1, wherein said second storage means retains data written in said second storage means, by said control unit,

until said data is written in said first storage means.

6. (currently amended): A data writing/reading apparatus for writing data into storage means, comprising:

a processor;

a first storage means which has a redundancy structure; and

a control unit which writes data in said first storage means in response to a command from said processor and includes

a second storage means, and

a logical disk writing/reading means for writing data in said second storage means when instructed by said processor ~~unit~~ and reporting completion of writing to said processor unit, wherein the processor instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage means, and reading the data from said second storage means when a command to read is received from said processor, and

wherein said logical disk writing/reading means reports the completion of writing to said processor when the control unit writes the data in said second storage means.

7. (previously presented): The data writing/reading apparatus according to claim 6, wherein said control unit further comprises a logical disk monitoring means which verifies if said redundancy at said address has been recovered, and

when said logical disk monitoring means verifies that said redundancy at said address has been recovered, said logical disk writing/reading means reads data written in said second storage means and writes said data at said address in said first storage means.

8. (previously presented): The data writing/reading apparatus according to claim 7, wherein said logical disk monitoring means comprises:

a management table updating means which checks a status of said first storage means and updates a management table;

a timer which informs said management table updating means of passage of a given time lapse; and

a write-enableness reporting means which reports recovery of said redundancy at said address of said first storage means to said logical disk writing/reading means when said management table indicates said recovery of said redundancy.

9. (previously presented): The data writing/reading apparatus according to claim 6, wherein said second storage means is a non-volatile storage means or volatile storage means which has an independent power supply.

10. (previously presented): The data writing/reading apparatus according to claim 6, wherein said second storage means retains the data, which was written in the second storage means by said control unit, until said data is subsequently read from the second storage means by said control unit.

11. (currently amended): A data writing apparatus for writing data into storage means, comprising:

a processor;

a first storage means, comprising redundancy structure wherein data and redundant data are written when instructed by a processor, if data of a size equal to or smaller than a size of said redundant data is destroyed, said first storage means ensuring data by repairing said data from remaining data

a control unit which writes data in said first storage means in response to a command from said processor and includes

a second storage means, and

logical disk writing/reading means for writing data in said second storage means

when instructed by said processor ~~unit~~ and reporting completion of writing to said processor unit, wherein the processor ~~unit~~ instructs the writing of data and the control unit writes the data in said second storage means when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage means, and

wherein said logical disk writing/reading means reports the completion of writing to said processor when the control unit writes the data in said second storage means.

12. (currently amended): A method for writing data into storage means where data to be written has a redundancy structure, comprising ~~the steps of~~:

A) when a redundancy destruction occurs at an address in a first storage means, wherein the first storage means has a redundancy structure, writing data in a second storage means as instructed by a processor, said data corresponding to an address of redundancy destruction in said first storage means;

B) reporting completion of writing data in said second storage means to said processor when the data instructed by said processor is written in said second storage means.

13. (previously presented): The method according to claim 12, further comprising the steps of:

C) verifying if redundancy at said address of said redundancy destruction of said first storage means has been recovered;

D) when recovery of said redundancy is verified, reading data written in said second storage means; and

E) writing said data at said address in said first storage means.

14. (previously presented): The method according to claim 12, further comprising the steps of:

C) checking a status of said first storage means when a given time elapses;

D) updating a management table;

E) reading data written in said second storage means when said management table

indicates recovery of said redundancy; and

F) writing said data at said address in said first storage means.

15. (currently amended): A method for writing and reading data into and from storage means where data to be written has a redundancy structure, comprising ~~the steps of~~:

A) when a redundancy destruction occurs at an address in a first storage means, writing data in a second storage means as instructed by an processor;

B) reporting completion of writing said data in said second storage means to said processor when the data instructed by said processor is written in said second storage means; and

C) reading data corresponding to a redundancy destruction in the first storage means as instructed by said processor.

16. (previously presented): The method according to claim 15, further comprising the steps of:

D) when recovery of said redundancy is verified, reading the data written in said second storage means and writing said data at said address in said first storage means.

17. (previously presented): The method according to claim 15, further comprising the steps of:

D) checking a status of said first storage means when a given time elapses;

E) updating a management table;

F) reading data written in said second storage means when said management table

indicates recovery of said redundancy; and

G) writing said data at said address in said first storage means.

18. (original): A computer program capable of running on a computer so that the computer performs said steps of claim 12.

19. (currently amended): A data writing apparatus that writes data into storage units, comprising:

a processor;

a first storage unit that includes a redundancy structure; and

a control unit that writes data in said first storage unit in response to a command from said processor-unit,

wherein the control unit includes a second storage unit, and

a logical disk writing/reading unit that writes data in said second storage device, when instructed by said processor unit and reports completion of writing to said processor, wherein the processor instructs the writing of data and the control unit writes the data in said second storage unit when a redundancy destruction occurs in said first storage unit, the data written to said second storage unit corresponding to an address of the redundancy destruction of said first storage unit, and

wherein said logical disk writing/reading unit reports the completion of writing to said processor when the control unit writes the data in said second storage device.